



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM S - SECTION 3. LAND APPLICATION

PERMIT NO.:	REPORTING PERIOD: CALENDAR YEAR
FACILITY NAME	
3.00 Land Application - General	
This section is based on Standard Conditions for NPDES Permits, Part III, dated Aug. 15, 1994. For a copy, contact the department at (573) 751-6825.	
Complete this section if sludge or biosolids were land applied for beneficial use by permittee or by contract hauler under permittee authority.	
3.01	
<input type="checkbox"/> dry tons of sludge applied during the report period.	
<input type="checkbox"/> average percent solids	
If less than 12 percent solids: _____ total gallons for year	
If 12 percent solids or greater: _____ cubic yards for year.	
3.02 SLUDGE STORAGE PROVIDED	
_____ cubic feet; _____ days of storage.	
Number of days each month that sludge was land applied:	
_____	_____
Jan	Feb
Mar	Apr
May	June
July	Aug
Sept	Oct
Nov	Dec
3.03 WHO APPLIES YOUR SLUDGE	
Permittee personnel <input type="checkbox"/> Yes <input type="checkbox"/> No	
Contract person <input type="checkbox"/> Yes <input type="checkbox"/> No	
Other, describe: _____	
3.10 Applicability (Per Section H or Part III Standard Conditions)	
3.11 ARE THERE ANY LAND APPLICATION SITES FARTHER THAN 20 MILES FROM THE WASTEWATER TREATMENT FACILITY?	
<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, a separate permit is required for those sites. Indicate permit numbers or submit new permit application for each site.	
Permit numbers: _____	
3.12 ARE ANY INDUSTRIAL SLUDGES LAND APPLIED BY THE PERMITTEE?	
<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, complete the following: Permit No: _____	
Type of Sludge _____ SIC Code _____	
3.13 ARE ALTERNATE LIMITS OR EXCEPTIONS LISTED IN THE SPECIAL CONDITIONS SECTION OF THE PERMIT?	
<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, attach explanation sheet.	
3.14 IS SLUDGE RECEIVED FROM ANY OUT-OF-STATE GENERATORS?	
<input type="checkbox"/> Yes <input type="checkbox"/> No If this sludge is handled separately, complete separate Sections 2 and 3 of Form S for the out-of-state sludge.	
3.20 Pollutant Limitations	
3.21 ARE METALS WITHIN THE CEILING CONCENTRATION LIMIT?	
<input type="checkbox"/> Yes <input type="checkbox"/> No If no, attach explanation sheet.	
3.22 ARE METALS WITHIN THE LOW METALS CONCENTRATIONS AND THE TOTAL OF ALL SLUDGE APPLICATIONS TO DATE (INCLUDING PREVIOUS YEARS) HAVE NOT EXCEEDED 500 DRY TONS/ACRE?	
<input type="checkbox"/> Yes <input type="checkbox"/> No Attach list of sites using Form SC.	
3.23 IF YOU ANSWERED NO TO 3.22, COMPLETE THE FOLLOWING.	
Have metals application rates reached any of the cumulative metals loadings? This is based on contributions from all historical sludge loadings, including industrial sludges.	
<input type="checkbox"/> Yes <input type="checkbox"/> No Attach a list of sites using Form SD.	
Soil test results for metals may be used if historical use is not known. Test metals concentration in parts per million (ppm) dry weight for the top six inches of soil and calculate pounds per acre using this formula:	
ppm (dry wt) in soil x 2 = pounds per acre for 6 inches soil depth.	

3.30 Management Practices

3.31 NITROGEN LIMITATIONS

Which of the following nitrogen approaches was used?

Sludge applied up to two dry tons/acre/year. ☐ Yes ☐ No

Plant Available Nitrogen (PAN) approach. ☐ Yes ☐ No

_____ Number of composite samples. Results for PAN in mg/kg dry weight and pounds per dry ton of sludge (lb/dt) [lb/dt = 0.002 x mg/kg]:

AVERAGE		MINIMUM	MAXIMUM
PAN	mg/kg	mg/kg	mg/kg
PAN	lb/dT	lb/dT	lb/dT

3.32 HAVE SLUDGE APPLICATIONS COMPLIED WITH THE FOLLOWING MANAGEMENT PRACTICES AS LISTED IN THE UNIVERSITY OF MISSOURI WQ 426 GUIDE, BEST MANAGEMENT PRACTICES FOR BIOSOLIDS LAND APPLICATION?

- | | | |
|--|------------------------------|-----------------------------|
| 1. No discharge of biosolids from application site. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. Public contact sites restriction. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. Crop restrictions. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. Harvest and grazing restrictions. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 5. Threatened or endangered species protection. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 6. Nitrogen limitations. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 7. Buffer zones. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 8. Slope limitations for application sites. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 9. Storm water runoff. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 10. Frozen, snow-covered or saturated soil conditions. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 11. Biosolids storage. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 12. Application rates. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 13. Application equipment. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 14. Soil pH limitations. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 15. Soil phosphorus limitations. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 16. Soil depth limitations. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 17. Record keeping. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

If No, attach sheet with explanation

3.33 CLASS A SLUDGE (PER WQ 424 GUIDE - BIOSOLIDS STANDARDS FOR PATHOGENS AND VECTORS).

Does the sludge meet Class A pathogen reduction? ☐ Yes ☐ No

Has Class A sludge been applied to public use sites? ☐ Yes ☐ No

If yes to the second question in 3.33, contact Department of Natural Resources.

3.40 Operational Standards for Class B Biosolids (See WQ 424.)

- ☐ Class B pathogen reduction requirements were met by either fecal coliform limits under section 2D or a PSRP listed in WQ 424, Table 2. Attach supporting data and indicate process option used.
- ☐ Class B pathogen requirements not currently met. Attach explanation and schedule of compliance.

3.41 VECTOR ATTRACTION REDUCTION REQUIREMENTS WERE MET.

- ☐ Yes ☐ No

3.50 Monitoring Frequency (Per WQ 424 - Monitoring Requirements for Biosolids Land Application.)

Attach a summary of the monitoring results on Form SA.

3.51 SLUDGE TESTING FOR METALS WAS PERFORMED:

- ☐ once/year ☐ once/six months
- ☐ once/quarter ☐ once/month
- ☐ once/week ☐ once/100 dry tons removed from lagoon.
- ☐ other, specify: _____

3.52 PERMITTEE IS REQUIRED TO HAVE AN APPROVED PRETREATMENT PROGRAM.

- ☐ Yes ☐ No If Yes, attach Form SB.

3.53 TOTAL SOLIDS TESTING WAS PERFORMED AT LEAST ONCE PER DAY DURING LAND APPLICATION PERIODS?

- ☐ Yes ☐ No If No, attach explanation.

3.54 NITROGEN TESTING WAS PERFORMED PER THE FREQUENCY IN WQ 423.

This frequency is _____. ☐ Yes ☐ No If No, attach explanation.

3.55 TOTAL PHOSPHORUS AND TOTAL POTASSIUM WERE TESTED AT THE SAME FREQUENCY REQUIRED FOR METALS AS INDICATED IN WQ 423.

- ☐ Yes ☐ No If No, attach explanation.

3.56 SOIL TESTING FOR PH AND CATION EXCHANGE CAPACITY (CEC) AND AVAILABLE PHOSPHORUS HAS BEEN CONDUCTED WITHIN THE LAST FIVE YEARS.

- ☐ Yes ☐ No If No, attach explanation.

3.57 WAS ANY ADDITIONAL SLUDGE OR SOIL TESTING REQUIRED UNDER THE SPECIAL CONDITIONS SECTION OF YOUR WATER POLLUTION CONTROL (NPDES) PERMIT?

- ☐ Yes ☐ No If Yes, attach a summary using Form SB.

PERMIT NO

REPORT PERIOD: CALENDAR YEAR

FACILITY NAME

3.60 Certification for Land Application

Check all that apply.

I certify under penalty of law that

- ☐ records on testing, and pollutant loadings, as listed above in Section 2, have been kept in accordance with 40 CFR 503.17.
- ☐ the management practices, as listed above in Section 2, have been met in accordance with 40 CFR 503.14.
- ☐ the Class B pathogen requirements and the site restrictions, as listed above in Section 2, have been met in accordance with 40 CFR 503.15 and 503.32.
- ☐ one of the vector attraction requirements, as listed above in Section 2, have been met in accordance with 40 CFR 503.15 and 503.33.

This determination has been made under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information used to determine these requirements have been met. I am aware that there are significant penalties for false certification, including the possibility of fine and imprisonment.

NAME

OFFICIAL TITLE

SIGNATURE

DATE



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM SC – LAND APPLICATION OF BIOSOLIDS WITH LOW METALS CONCENTRATIONS

Use this form for application sites that have received biosolids with low metal(s) concentrations per Section 3.22 of Form S. Enter the site number for each field based on the site maps on file at the facility. Report biosolids application rate in dry tons per acre per year (dt/ac/yr). Attach additional copies of this sheet as needed.

PERMIT NO. MO—	REPORT PERIOD: CALENDAR YEAR
-----------------------	------------------------------

FACILITY NAME

SITE NO.	OWNERS NAME
LEGAL _____ 1/4, _____ 1/4, SEC _____, T _____, R _____, COUNTY _____	
BIOSOLIDS _____ dt/ac/yr _____ acres	NITROGEN _____ lbs/ac/yr (TKN OR PAN)
CROPS GROWN	SOIL pH

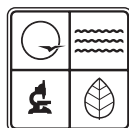
SITE NO.	OWNERS NAME
LEGAL _____ 1/4, _____ 1/4, SEC _____, T _____, R _____, COUNTY _____	
BIOSOLIDS _____ dt/ac/yr _____ acres	NITROGEN _____ lbs/ac/yr (TKN OR PAN)
CROPS GROWN	SOIL pH

SITE NO.	OWNERS NAME
LEGAL _____ 1/4, _____ 1/4, SEC _____, T _____, R _____, COUNTY _____	
BIOSOLIDS _____ dt/ac/yr _____ acres	NITROGEN _____ lbs/ac/yr (TKN OR PAN)
CROPS GROWN	SOIL pH

SITE NO.	OWNERS NAME
LEGAL _____ 1/4, _____ 1/4, SEC _____, T _____, R _____, COUNTY _____	
BIOSOLIDS _____ dt/ac/yr _____ acres	NITROGEN _____ lbs/ac/yr (TKN OR PAN)
CROPS GROWN	SOIL pH

SITE NO.	OWNERS NAME
LEGAL _____ 1/4, _____ 1/4, SEC _____, T _____, R _____, COUNTY _____	
BIOSOLIDS _____ dt/ac/yr _____ acres	NITROGEN _____ lbs/ac/yr (TKN OR PAN)
CROPS GROWN	SOIL pH

SITE NO.	OWNERS NAME
LEGAL _____ 1/4, _____ 1/4, SEC _____, T _____, R _____, COUNTY _____	
BIOSOLIDS _____ dt/ac/yr _____ acres	NITROGEN _____ lbs/ac/yr (TKN OR PAN)
CROPS GROWN	SOIL pH



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM SD – CUMULATIVE METAL LOADINGS FOR LAND APPLICATION OF BIOSOLIDS

Use this form for application sites that have received biosolids that exceed the low metals concentrations or have exceeded a cumulative site loading of 500 dry tons/acre of biosolids per Section 3.22 of Form S. Enter the site number for each field based on the site maps on file at the facility. Attach additional copies of this sheet as needed.

PERMIT NO. MO—	REPORT PERIOD: CALENDAR YEAR
-----------------------	------------------------------

FACILITY NAME

SITE NO.	LAND OWNERS NAME
----------	------------------

LEGAL _____ 1/4, _____ 1/4, SEC _____, T _____, R _____, COUNTY _____
--

BIOSOLIDS _____ dt/ac/yr _____ acres	NITROGEN _____ lbs/ac/yr (TKN OR PAN)
---	--

CROPS GROWN

PARAMETER	UNITS	CUMULATIVE LOADINGS			
		PREVIOUS TOTAL	ADDED THIS YEAR	CURRENT TOTAL	PERCENT OF** ALLOWED LOAD
BIOSOLIDS	TON/ACRE*				
TOTAL ARSENIC	LBS/ACRE*				%
TOTAL CADMIUM	LBS/ACRE*				%
TOTAL CHROMIUM	LBS/ACRE*				%
TOTAL COPPER	LBS/ACRE*				%
TOTAL LEAD	LBS/ACRE*				%
TOTAL MERCURY	LBS/ACRE*				%
TOTAL MOLYBDENUM	LBS/ACRE*				%
TOTAL NICKEL	LBS/ACRE*				%
TOTAL SELENIUM	LBS/ACRE*				%
TOTAL ZINC	LBS/ACRE*				%
SOIL pH (SALT TEST)	pH UNITS				%
SOIL CEC	meg/100g SOIL				%

*Report as dry weight.

**Report the percentage of the allowable cumulative loading for the site based on the limits in Permit Standard Conditions Part III. Round to the nearest 5 percent. If less than 10 percent, report as <10.